

CAVE HUNTING.¹

SINCE the memorable researches of Dr. Buckland in the early part of last century, the exploration of British caves has had a great fascination for many investigators. This is no matter for surprise, for there are many points of interest which await elucidation regarding prehistoric man and the animals by which he was surrounded in very early times, and there is a great probability that some of these problems will be solved by cavern researches. When we remember, also, how much has already been revealed by cave hunting, we are led to hope for more in the future, and consequently investigations in this direction raise our expectations.

The current number of the *Quarterly Journal* of the Geological Society contains an interesting account of a cave discovered about two years ago near Brassington, Derbyshire. Shortly after its discovery the cave was visited by a number of "ardent collectors," and many bones and teeth were carried away; but very soon permission was given by Major Nicholson, the owner, for the deposits to be carefully investigated on behalf of the Derbyshire Archæological and Natural History Society, the work falling almost wholly on the authors of this paper.

The cave is in a quarry situated on the south-eastern edge of the Mountain Limestone plateau, and its floor is about 1090 feet above Ordnance Datum, the top of the quarry being some 30 feet higher. The highest part of the plateau in the neighbourhood is formed by the Harbro Rocks, which at some little distance, and with a depression between, rise to a height of 1244 feet, that is, about 120 feet higher than the entrance to the swallow hole which opened into the top of the cavern.

The cavern itself was a master joint in the limestone, enlarged by the action of water, and when found (it is now entirely destroyed) extended about 120 feet from the S.S.E. to the N.N.W., and in this direction it deepened considerably. Much care seems to have been taken to keep separate the bones from each layer, and fifteen spots are marked on the section given to indicate distinct layers or places where bones were discovered. Eventually, however, these were grouped into three series:—(1) The upper inclined layers which had accumulated to the S.S.E. of the swallow hole, and from which they were evidently derived. By far the greater number of the specimens were found in this part of the cave. To the N.N.W. of the swallow hole very few bones were met with, and the deposit was of a more irregular character, seeming to indicate a different mode of origin.

(2) The second division included all that was obtained in a stratum about three feet in depth excavated below the level of the quarry floor, and extending throughout the length of the cave. Very few bones were found, but these included remains of hyæna and of a small deer which it was important to know were present at this early stage of the cave's history.

(3) The third, and oldest series of deposits, were some highly inclined beds at the N.N.W. end of the cave, which were explored to a considerable depth in the hope of meeting with Pliocene mammals, such as were recognised by Prof. W. Boyd Dawkins in the cave at Doveholes in 1903, but unfortunately without finding any such remains. We wish the explorers had had more success in this deeper exploration; however, it is satisfactory to know that the search was made, even though the results were negative.

The number of bones yielded by this cave could scarcely have been less than 10,000, for the authors have accounted for 8000, and many were carried away before they began work. Nearly half these remains belonged to bovine and cervine animals, while between six and seven hundred of them are referable to hyænas. It seems pretty certain that this cave was a hyæna-den, and although no entrance was found except the swallow hole, yet it is possible that this was the means of access.

Some twenty-seven species of mammals, birds, and amphibia have been identified from Hoe Grange



FIG. 1.—Hoe Grange Quarry, showing entrance to Cave. From photograph by H. Arnold-Bemrose.

cave, but about half of these belong to the smaller forms of vertebrates, which as a rule have not been recorded in cave researches. The rich harvest of these small creatures which rewarded the patient labour of Mr. Lewis Abbott some ten years ago in the rock fissure at Ightham, Kent, has caused more careful search to be made for them in recent researches, and with good results, such as those of Mr. R. S. Ussher in his cave hunting in Ireland during the last two or three years, only a part of which have yet been published. Search was made for these smaller animals at Hoe Grange, but with only partial success. Among the larger animals represented in the cave, the lion will perhaps attract most attention, and one of the few specimens obtained is part of the lower jaw of a cub with some of the milk teeth still in place. The hyæna, wild cat, wolf, fox, grisly bear, and badger are the other carnivores which have been identified.

Rhinoceros remains occurred in some abundance, and the teeth show that they belong to the *Rhinoceros leptorhinus*, not to the woolly rhinoceros, the form hitherto found in Derbyshire. The elephant is re-

¹ "On an Ossiferous Cave of Pleistocene Age at Hoe Grange Quarry, Longcliffe, near Brassington (Derbyshire)." By H. H. Arnold-Bemrose, J.P., M.A., and E. T. Newton, F.R.S. (*Quart. Journ. Geol. Soc.* vol. lxi. p. 43, 1904.)

presented by a single specimen, part of a milk molar of *Elephas antiquus*; this again is peculiar, the elephant previously met with in Derbyshire being the mammoth (*E. primigenius*). The presence of *Elephas antiquus* and *Rhinoceros leptorhinus*, as we learn from the discussion following the paper, led Prof. Dawkins to regard the deposits at Hoe Grange as belonging to the older Pleistocene group of caves.

Among the numerous bovine remains there are no horn-cores and frontal bones to indicate the species to which these remains belong, and the measurements of several metacarpals given in the paper show that limb-bones alone are not sufficient to indicate whether the remains are those of *Bos* or of *Bison*.

The Cervidæ are represented by four species, the

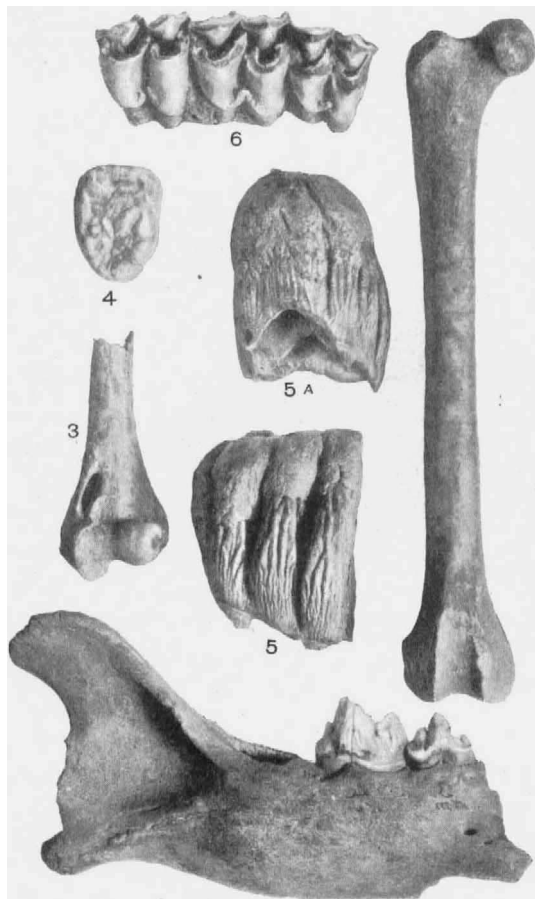


FIG. 2.—Mammalian Bones from Hoe Grange Cavern. 1, Lion-cub, lower jaw; 2, Wild Cat, femur; 3, Wild Cat, humerus; 4, Bear, molar tooth; 5, 5A, *Elephas antiquus*, milk tooth; 6, Fallow deer, three molar teeth.

great Irish deer (*Cervus giganteus*), the red deer (*C. elaphus*), the roebuck (*Capreolus caprea*), and another form, intermediate in size between the last two, which is regarded by the authors as fallow deer (*Cervus dama*). Bones and teeth of the last-named form were very numerous, nearly 1600 specimens having been found. If these remains are indeed parts of Pleistocene fallow deer, and we see no way to any other conclusion, they are of the greatest interest. The fallow deer has not hitherto been accepted, at least by modern writers, as a member of

the British Pleistocene fauna, but is thought to have been introduced to this country probably by the Romans.

There are two points, however, which have to be settled before we can accept this addition to our Pleistocene mammals:—(1) Are these remains certainly those of fallow deer? and if so (2) Is the deposit in which they were found really of Pleistocene age?

It is to be regretted that there are no sufficiently well preserved antlers to define the species clearly, but the limb-bones and teeth are of such a size that if there had been no question of age there would have been little or no doubt in referring them to fallow deer. In the circumstances the authors have carefully measured the teeth and made comparisons with both fallow and red deer, and feel compelled to regard these remains as parts of fallow deer or of a closely allied species. The only Pleistocene species of a size which might compare with these bones and teeth is the *Cervus Browni* described by Prof. Boyd Dawkins from Pleistocene beds at Clacton, and this is only known by its antler, which is distinguished from that of the fallow deer by the presence of an additional tine. It has been shown, however, that modern fallow deer sometimes have this additional tine (see NATURE, vol. xi., p. 210), and it thus becomes very doubtful whether *C. Browni* is really a distinct species. Although there are no antlers from Hoe Grange cave that can be compared with *C. Browni*, yet it seems almost certain that the authors are correct, and that these Hoe Grange remains are representatives of the fallow deer.

We have now to consider the age of the Hoe Grange deposits. There can be no question as to the Pleistocene age of the elephant, rhinoceros, hyæna, and lion, and there is no doubt as to the fallow deer bones being found with the remains of those animals; but it is just possible that the fallow deer was living in the neighbourhood at a time when a previously existing Pleistocene deposit was washed into this cave, and so the more modern animal got mixed with the older forms. In order that such a re-deposition of large bones might take place there must have been a considerable supply of water, and seeing that the cave at the present time is near the top of the plateau there is no collecting ground for water; and it becomes necessary to suppose that, at the time of the re-deposition of the bones, the land was much higher than it is now, and that it has since been denuded. But it must be remembered that this would mean a very large amount of denudation, and, if we are to accept the fallow deer as a Roman importation, this denudation must have taken place since Roman times, which seems extremely improbable. We think, therefore, that the authors are justified in regarding these particular cervine remains as those of fallow deer, and as good evidence that the species lived in this country in Pleistocene times.

A fallow deer's antler has been recorded recently by Dr. Herlaf Winge from an interglacial deposit in Denmark; and this early extension of the species so far north on the Continent makes its occurrence in England in Pleistocene times still more probable. It is remarkable that *Cervus dama*, or rather its equivalent, *C. Browni*, should have been so rarely found, hitherto, in Pleistocene deposits, seeing that it is so abundant in the Hoe Grange cave.

A word regarding the illustrations accompanying this paper, two of which, by the courtesy of the council of the Geological Society, we are able to reproduce. The views of the cave are very credit-

able reproductions, but we have nowadays become accustomed to good things of this kind. It is rarely, however, that we have seen such satisfactory reproductions of photographs taken directly from the fossils as we have in the two plates. Most of the good colotype reproductions of fossils that have recently appeared are from photographs of water-colour drawings, and some of them are certainly very effective; but there is the artist's equation to allow for. In the present case, no such allowance has to be made, and the figures of the lion's jaw as well as of the teeth of the fallow deer and elephant are admirable. These plates do credit to all concerned in their production.

FIJIAN FOLK-TALES.¹

ETHNOLOGISTS have all along suspected that Mr. Fison has plenty of unpublished information concerning Fiji. They are grateful to him for what he has already published in the *Journal of the*

can be claimed is that it is of the native pattern." The tales are interesting as stories, and have increased value when compared with other tales from Oceania, but their greatest importance rests in their value as evidence of the ideas and actions of the natives before the white man came. In the introduction Mr. Fison gives a long discussion concerning cannibalism, and he sums it up thus:—

"It is impossible to establish a certainty as to the origin of cannibalism, and the question resolves itself into a comparison of probabilities, the balance being in favour of the strongest motive. This is undoubtedly Hunger. It is stronger than Superstition; it is stronger than Revenge. Man is a carnivorous animal, whatever the vegetarians may say; and in a savage state of society, if he cannot get the food for which his stomach craves, he will '*kusima*' (crave, or hunger after flesh) until he eats his brother."

For, as Mr. Fison argues, the Fijians were formerly scantily supplied with animal food. The serious student is occasionally tantalised by hints of further



FIG. 1.—Bau, Fiji. From Fison's "Tales from Old Fiji."

Anthropological Institute, but they clamoured for more, and even now they will not remain satisfied with the handsome book that has just been issued by the De La More Press. This new book contains a dozen folk-tales capitally told; "each contains a genuine legend as its skeleton, for the flesh with which that skeleton has been covered, the most that

information, and by allusions to possible discussions of social and other questions, all of which are passed by as not being suitable for a popular book; doubtless Mr. Fison was wise in restraining himself, but, for the sake of science, it is sincerely to be hoped that he will give all his information to the world in some form or another. In the meantime we thank Mr. Fison for this publication, which can be recommended to those who like interesting information about real savages told in a pleasing manner.

¹ "Tales from Old Fiji." By Lorimer Fison. Pp. xlv+175; illustrated. (London: A. N. Ling, Ltd., the De La More Press, 1904.) Price 7s. 6d. net.